

	91		150
P-PvArc4-417775-FL	ATTGTTT... .CACCTACAA	TGATAATATA	TTAAAAAGTG AACTTTAAAT
P-PvArc3-417683-FL	ATTGTTT... .CACCTACAA	TGATAATATA	TTAAAAAGTG AACTTTAAAT
P-Pv-Arc5-FL	ATTTTTTTTCA CATAACAATTA	TGATAATATA	TTAAAAAGTG AACTTTAAAT
	391		440
P-PvArc4-417775-FL	TAATTTTACA. ....	.AGTTAAATT	AATTCAGCTT GTCTCCTTGA
P-PvArc3-417683-FL	TAATTTTACA. ....	.AGTTAAATT	AATTCAGCTT GTCTCCTTGA
P-Pv-Arc5-FL	TAATTTTACAA TATATAGATT	CAGTTAAATC	AATTCAGCTT GTCTCCTTGA
	801		850
P-PvArc4-417775-FL	TGTTTATGCT CTTTTTCGGAA	TTAATTAAGT	TTTAGTTGTA ATTGTAATAA
P-PvArc3-417683-FL	TGTTTATGCT CTTTTTCGGAA	TTAATTAAGT	TTTAGTTGTA ATTGTAATAA
P-Pv-Arc5-FL	TGTTT.....		.CTGTAATAA
	901		950
P-PvArc4-417775-FL	TTAGTCACGA GTGTGTATCC	TCACCCCTCA	CAAACAACAT TTCAAGAAAA
P-PvArc3-417683-FL	TTAGTCACGA GTGTGTATCC	TCACCCCTCA	CAAACAACAT TTCAAGAAAA
P-Pv-Arc5-FL	CTAGTCATGA G.....	.CACCCTCA	GAGACAAGAT TTCAAGAAAA
	1351		1400
P-PvArc4-417775-FL	ATA.....	.....AAATT	TTATAAAAAG GGAAAATCAA ATTAGAATTT
P-PvArc3-417683-FL	ATA.....	.....AAATT	TTATAAAAAG GGAAAATCAA ATTAGAATTT
P-Pv-Arc5-FL	ATATATAATA TATACAATTA	AATAAAAAAG	GGAAAATCAA ATTAGAATTT
	1751		1800
P-PvArc4-417775-FL	CGTTGTTTGT TAATTGTTAA	TTTTATATTA	TTATTTCTCC CTCAAATAAT
P-PvArc3-417683-FL	CGTTGTTTGT TAATTGTTAA	TTTTATATTA	TTATTTCTCC CTCAAATAAT
P-Pv-Arc5-FL	CGTTGTTTAA TAATTGTTAA	TTTGAGATT.	..... GAATAAT
	1801		1850
P-PvArc4-417775-FL	ATTATAAAAAG ATAATGATTC	.....GATT	TTGCATTTGT TGTTGTATAA
P-PvArc3-417683-FL	ATTATAAAAAG ATAATGATTC	GATTTTGATT	TTGCATTTGT TGTTGTATAA
P-Pv-Arc5-FL	AAAATGAAAG AAAAAAGTTG	GA..AAGATT	TTGCATTTGT TGTTGTATAA
P-PvArc4-417775-FL	(SEQ ID NO: 10)		
P-PvArc3-417683-FL	(SEQ ID NO: 9)		
P-Pv-Arc5-FL	(SEQ ID NO: 11)		

*Figure 1*

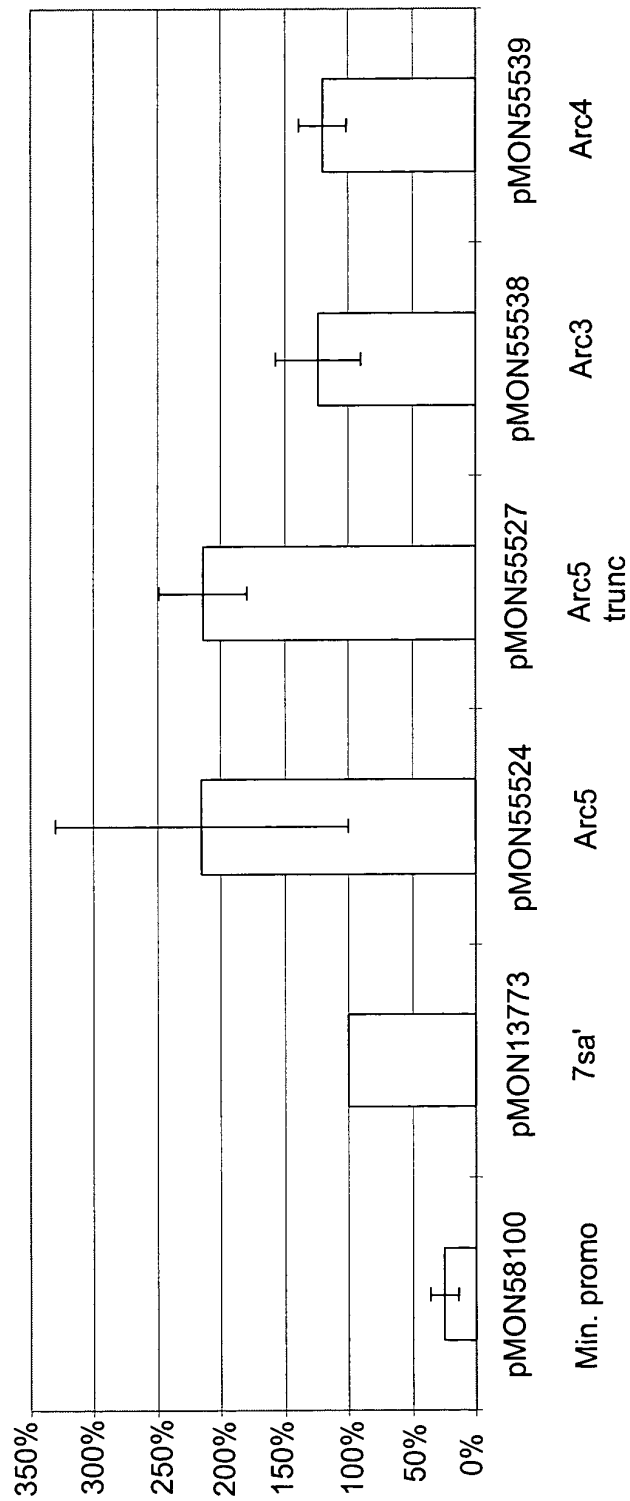


Figure 2

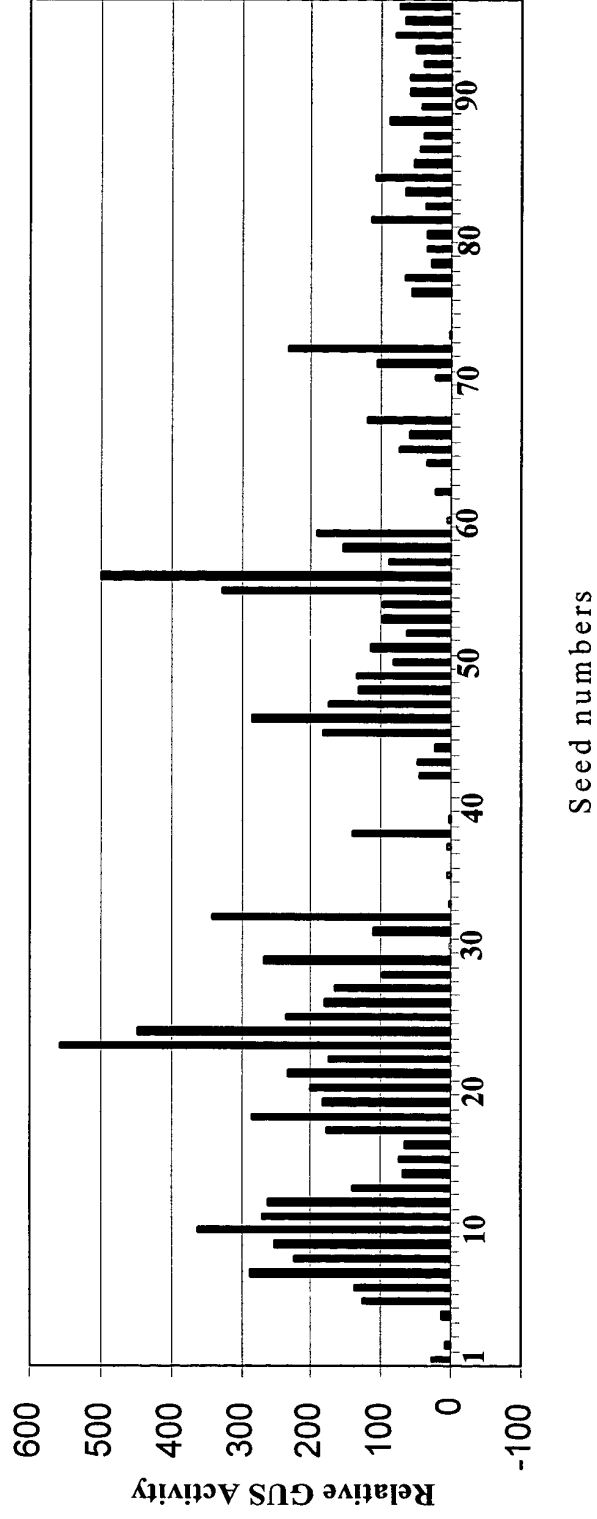


Figure 3

!!NA\_MULTIPLE\_ALIGNMENT 1.0  
 PileUp of: @/usr4/people/ppdubo/.seqlab-mendel/pileup\_1.list

Symbol comparison table: GenRunData:pileupdna.cmp CompCheck: 6876

pileup\_1.msf MSF: 1903 Type: N July 12, 2000 09:15 Check: 8196 ..

Name: P-PvArc4-417775-FL Len: 1903 Check: 2130 Weight: 1.00  
 Name: P-PvArc3-417683-FL Len: 1903 Check: 8855 Weight: 1.00  
 Name: P-Pv-Arc5-FL Len: 1903 Check: 7211 Weight: 1.00

	1		50
P-PvArc4-417775-FL	CTGCAGTCCT ACATAATTCT TCTACCGTTA ACCGTCAAAT CATATTTTCA		
P-PvArc3-417683-FL	CTGCAGTCCT ACATAATTCT TCTACCGTTA ACCGTCAAAT CATATTTTCA		
P-Pv-Arc5-FL	CTGCAGTCCT ACATAATTCT TCTACAGTTA ACCTTCAAAT CATATTTTCA		
	51		100
P-PvArc4-417775-FL	TTATTCACAA ATATCTAGTG TCTCATACGA ATAAATATAT ATTGTTT...		
P-PvArc3-417683-FL	TTATTCACAA ATATCTAGTA TCTCATACGA ATAAATATAT ATTGTTT...		
P-Pv-Arc5-FL	TTATTCACAA ATATCTAGTC ATTCATACGA ATAAATATAT ATTTTTTTTCA		
	101		150
P-PvArc4-417775-FL	.CACCTACAA TGATAATATA TTAAAAAGTG AACTTTAAAT GTAATTTAAT		
P-PvArc3-417683-FL	.CACCTACAA TGATAATATA TTAAAAAGTG AACTTTAAAT GTAATTTAAT		
P-Pv-Arc5-FL	CATACAATTA TGATAATATA TTAAAAAGTG AACTTTAAAT TTAATTTAAT		
	151		200
P-PvArc4-417775-FL	CTCATAAAAAT CGACTTATAA AATGAGATTT ATACCTACGA TCGATAAAAA		
P-PvArc3-417683-FL	CTCATAAAAAT CGACTTATAA AATGAGATTT ATACCTACGA TCGATAAAAA		
P-Pv-Arc5-FL	CTTATAAAAAAT CAACTTATAA AATGAGATTT CTACCTACGA TTAATAAAAA		
	201		250
P-PvArc4-417775-FL	TAACTTTAAT ATCATATTAA GAAATAAACT TTAAACCTAA CTCAATTTTA		
P-PvArc3-417683-FL	TAACTTTAAT ATCATATTAA GAAATAAACT TTAAACCTAA CTCAATTTTA		
P-Pv-Arc5-FL	TAACTTTGAT ATCATATTAA AAAATAAACT TTAAACCTAA CTCAACTTTA		
	251		300
P-PvArc4-417775-FL	TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT		
P-PvArc3-417683-FL	TAAAACCAAT TTATAAAATA AAATTTACAC TCACTTATAT ATTATAAAAT		
P-Pv-Arc5-FL	TAAAACCAAT TTATAAAATA AAATTTACAC TCAGTTATGA ATTATAAAAT		
	301		350
P-PvArc4-417775-FL	AAAATAGTTT TTAGGTGACG TGAAATCTCC ATCCGATTAA TCAATATTTT		
P-PvArc3-417683-FL	AAAATAGTTT TTAGGTGACG TGAAATCTCC ATCCGATTAA TCAATATTTT		
P-Pv-Arc5-FL	GAAATAGTTT TTAGGTGACG TGGAATCTCC ATCCGATTAA TCAATATTTG		

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*Figure 4a*

	351		400
P-PvArc4-417775-FL	CTGATGTTAT TGTATTATA GAAACTAAAA ACATGCCAAA TAATTTACA.		
P-PvArc3-417683-FL	CTGATGTTAT TGTATTATA GAAACTAAAA ACATGCCAAA TAATTTACA.		
P-Pv-Arc5-FL	ATGATGTTAT TGTATTATA GAAACTAAAA ACATGCCAAA TAATTTACAA		
	401		450
P-PvArc4-417775-FL	..... .AGTTAAATT AATTCAGCTT GTCTCCTTGA CTAATAAAAAC		
P-PvArc3-417683-FL	..... .AGTTAAATT AATTCAGCTT GTCTCCTTGA CTAATAAAAAC		
P-Pv-Arc5-FL	TATATAGATT CAGTTAAATC AATTCAGCTT GTCTCCTTGA CTAATAAAAA		
	451		500
P-PvArc4-417775-FL	ACAACTTTAG ACTATTATTC AGATTTACAC TTCATCTCTC ATGATATCCC		
P-PvArc3-417683-FL	ACAACTTTAG ACTATTATTC AGATTTACAC TTCATCTCTC ATGATATCCC		
P-Pv-Arc5-FL	AAAACTTTAG ACTATTATTC AGATTTACAC TTCATCTCTC ATGATATCCC		
	501		550
P-PvArc4-417775-FL	TCAAAGTGAA TTTCATTCAT GGCACCATTT ATATAATCAA CAATTTTAAA		
P-PvArc3-417683-FL	TCAAAGTGAA TTTCATTCAT GGCACCATTT ATATAATCAA CAATTTTAAA		
P-Pv-Arc5-FL	TCAAAGTGAA TTTCATTCAT GGCACCATTT ATATAATCAA CAATTTTAAA		
	551		600
P-PvArc4-417775-FL	AAGATGCAAA TTTGTACTAG TAAATGCTTC AATGTCCCTG ATAAACACAC		
P-PvArc3-417683-FL	AAGATGCAAA TTTGTACTAG TAAATGCTTC AATGTCCCTG ATAAACACAC		
P-Pv-Arc5-FL	AATATGCAAA TTTGTACCAG TAAATGCTTT AATGTCCCTG ATAAACACAA		
	601		650
P-PvArc4-417775-FL	ACAAAAAAAC CTTTTCATAT TTTTTCCTTA TTAAATAAAG AAATTCATTG		
P-PvArc3-417683-FL	ACAAAAAAAC CTTTTCATAT TTTTTCCTTA TTAAATAAAG AAATTCATTG		
P-Pv-Arc5-FL	AAAAAAAAA. .AATTCATAT TTTTTCCTTA TTAAATAAAG AAGTTCATTG		
	651		700
P-PvArc4-417775-FL	TAAGAGAAAT TAGGATCCTT CAATAGAAAA TGTGTTATTT CCTCATCACC		
P-PvArc3-417683-FL	TAAGAGAAAT TAGGATCCTT CAATAGAAAA TGTGTTATTT CCTCATCACC		
P-Pv-Arc5-FL	TAAGAGAAAT TAGGATCCTT CAATAGAAAA TGTGTTATTT CCTCATCACC		
	701		750
P-PvArc4-417775-FL	AGGAAAAAAA GGACAACAGT TAACACAACA AATTTATGTT TCATTTGAGA		
P-PvArc3-417683-FL	AGGAAAAAAA GGACAACAGT TAACACAACA AATTTATGTT TCATTTGAGA		
P-Pv-Arc5-FL	AG. .ACAAAG GGGCAACAGT TAACAAAACA AATTTATGTT TCATTTGAGA		
	751		800
P-PvArc4-417775-FL	TTAAGGAAGG TAAGGAAGAA AAAAGATTAA AAAAAATGTC CTTATCTCTT		
P-PvArc3-417683-FL	TTAAGGAAGG TAAGGAAGAA AAAAGATTAA AAAAAATGTC CTTATCTCTT		
P-Pv-Arc5-FL	TTAAGGAAGG TAAGGAAGAA AAAAGATTAA AAAAAATGTC CTTATCTCTT		

Figure 4b

	801		850
P-PvArc4-417775-FL	TGTTTATGCT	CTTTTCGGAA	TTAATTAAGT TTTAGTTGTA ATTGTAATAA
P-PvArc3-417683-FL	TGTTTATGCT	CTTTTCGGAA	TTAATTAAGT TTTAGTTGTA ATTGTAATAA
P-Pv-Arc5-FL	TGTTT.....	.....	.....CTGTAATAA
	851		900
P-PvArc4-417775-FL	TAATATAAGA	GACTTAAACT	TTTAATATAA TAATTATAAT TAGGTTTTTT
P-PvArc3-417683-FL	TAATATAAGA	GACTTAAACT	TTTAATATAA TAATTATAAT TAGGTTTTTT
P-Pv-Arc5-FL	TAATATAAGA	GACTTAAACT	TTTAATATAA TAATTGTAAT TAGG..TTTT
	901		950
P-PvArc4-417775-FL	TTAGTCACGA	GTGTGTATCC	TCACCCCTCA CAAACAACAT TTCAAGAAAA
P-PvArc3-417683-FL	TTAGTCACGA	GTGTGTATCC	TCACCCCTCA CAAACAACAT TTCAAGAAAA
P-Pv-Arc5-FL	CTAGTCATGA	G.....	.CACCCTCA GAGACAAGAT TTCAAGAAAA
	951		1000
P-PvArc4-417775-FL	CAATTTTGTT	AAACATCTTA	TTAGAAACTT TTAGCAAAGT CTTGAAGTTA
P-PvArc3-417683-FL	CAATTTTGTT	AAACATCTTA	TTAGAAACTT TTAGCAAAGT CTTGAAGTTA
P-Pv-Arc5-FL	CAATTTTGTT	AAACATCTTA	TTAGAAACTT TTAGTTAAGT CTTGAAGTTA
	1001		1050
P-PvArc4-417775-FL	GAATTAAACA	AAAAATTTAC	ACACACGAGG AACACAATAA ACCTACTATC
P-PvArc3-417683-FL	GAATTAAACA	AAAAATTTAC	ACACACGAGG AACACAATAA ACCTACTATC
P-Pv-Arc5-FL	GAATTAAACA	AAAAAAT.T	ACACACGAGA AACACAATAA ACCCACTACC
	1051		1100
P-PvArc4-417775-FL	GTCAGGTTAT	CATAAGGATG	AAATGTTTTG ATACCATTAA ATATAACACA
P-PvArc3-417683-FL	GTCAGGTTAT	CATAAGGATG	AAATGTTTTG ATACCATTAA ATATAACACA
P-Pv-Arc5-FL	GTCAGGTTAT	CATAAGGATG	AAATGTTTTG ATATCATTAA ATATAACACA
	1101		1150
P-PvArc4-417775-FL	CACAAAAATA	CATGTAATTA	TAACAATACA TGTTATAC.. ATATTTTGA
P-PvArc3-417683-FL	CACAAAAATA	CATGTAATTA	TAACAATACA TGTTATAC.. ATATTTTGA
P-Pv-Arc5-FL	CACAAAAATA	CATCTAATTA	TAACAATATA TGTTATACAT ATATTTTGT
	1151		1200
P-PvArc4-417775-FL	AAAAACTTAA	AGTTTTTCAA	AACATTCTTA ATACATGATT AGAGCTTATA
P-PvArc3-417683-FL	AAAAACTTAA	AGTTTTTCAA	AACATTCTTA ATACATGATT AGAGCTTATA
P-Pv-Arc5-FL	AAAAACTTAG	AGTTTTTCAA	AACATTC.TA ATACATGATT AGAGTTTATA
	1201		1250
P-PvArc4-417775-FL	GAAATACAAA	TATTTAAAAA	ATATAACTTT AAAAAACAT CTTAAAGTC.
P-PvArc3-417683-FL	GAAATACAAA	TATTTAAAAA	ATATAACTTT AAAAAACAT CTTAAAGTC.
P-Pv-Arc5-FL	GAAATACAAA	TATTTAAAAA	ATATAATTTT AAAAAACAT TCTAAAGTCA

Figure 4c

	1251				1300
P-PvArc4-417775-FL	CTCATATCCT	CTCACACCGG	TGAAATCATT	TACTCGTAGT	ATAGTACCGT
P-PvArc3-417683-FL	CTCATATCCT	CTCACACCGG	TGAAATCATT	TACTCGTAGT	ATAGTACCGT
P-Pv-Arc5-FL	TTCAGATCCT	CTCACACCTG	TGTGATCATT	TAGTCAT.GT	ATGTAGTACA
	1301				1350
P-PvArc4-417775-FL	GTCATAATAG	TTCACAACAC	AGTAAAAAGA	ATAAGAATAA	ACTAGTGAAT
P-PvArc3-417683-FL	GTCATAATAG	TTCACAACAC	AGTAAAAAGA	ATAAGAATAA	ACTAGTGAAT
P-Pv-Arc5-FL	ATCATTGTAG	TTCACAACAG	AGTAAAATAA	ATAAGGATAA	ACTAGGGAAT
	1351				1400
P-PvArc4-417775-FL	ATA.....	.....AAATT	TTATAAAAAG	GGAAAATCAA	ATTAGAATTT
P-PvArc3-417683-FL	ATA.....	.....AAATT	TTATAAAAAG	GGAAAATCAA	ATTAGAATTT
P-Pv-Arc5-FL	ATATATAATA	TATACAATTA	AATAAAAAAG	GGAAAATCAA	ATTAGAATTT
	1401				1450
P-PvArc4-417775-FL	TTGATTCCCC	ACATAACACA	ACTCACCATG	CACGCTGCCA	CCTCAGCTCC
P-PvArc3-417683-FL	TTGATTCCCC	ACATAACACA	ACTCACCATG	CACGCTGCCA	CCTCAGCTCC
P-Pv-Arc5-FL	TTGATTCCCC	ACATGACACA	ACTCACCATG	CACGCTGCCA	CCTCAGCTCC
	1451				1500
P-PvArc4-417775-FL	CTCCTCTCCA	CACATGTCTC	ATGTCACTTT	CGACTTTGGC	TTTTTCACTA
P-PvArc3-417683-FL	CTCCTCTCCA	CACATGTCTC	ATGTCACTTT	CGACTTTGGC	TTTTTCACTA
P-Pv-Arc5-FL	CTCCTCTCCA	CACATGTCTC	ATGTCACTTT	CGACTTTGGC	TTTTTCACTA
	1501				1550
P-PvArc4-417775-FL	GGAGACAACT	CGCCATGCAC	GCTGCCACGT	CAGCTCCTTC	CTCTTCCCAT
P-PvArc3-417683-FL	GGAGACAACT	CGCCATGCAC	GCTGCCACGT	CAGCTCCTTC	CTCTTCCCAT
P-Pv-Arc5-FL	TGACACAACT	CGCCATGCAT	GTTGCCACGT	GAGCTCCTTC	CTCTTCCCAT
	1551				1600
P-PvArc4-417775-FL	GATGACACCA	CTGGGCATGC	ATGATGCCAC	CTCAGCTCCC	ACCTCTTCTC
P-PvArc3-417683-FL	GATGACACCA	CTGGGCATGC	ATGATGCCAC	CTCAGCTCCC	ACCTCTTCTC
P-Pv-Arc5-FL	GATGACACCA	CTGGGCATGC	ATGATGCCAC	CTCAGCTCCC	ACCTCTTCTC
	1601				1650
P-PvArc4-417775-FL	ATTATGAGCC	TACTGGCCAT	GCACACTGCC	ACCTCAGCAC	TCCTCTCACT
P-PvArc3-417683-FL	ATTATGAGCC	TACTGGCCAT	GCACACTGCC	ACCTCAGCAC	TCCTCTCACT
P-Pv-Arc5-FL	ATTATGAGCC	TACTGGCCAT	GCACACTGCC	ACCTCAGCAC	TCCTCTCACT
	1651				1700
P-PvArc4-417775-FL	TCCCATTGCT	ACCTGCCAAA	CCGCTTCTCT	CTATAAATAT	CTCTTTAAAT
P-PvArc3-417683-FL	TCCCATTGCT	ACCTGCCAAA	CCGCTTCTCT	CTATAAATAT	CTCTTTAAAT
P-Pv-Arc5-FL	TCCCATTGCT	ACCTGCCAAA	CCGCTTCTCT	CCATAAATAT	CTATTTAAAT

Figure 4d

	1701				1750
P-PvArc4-417775-FL	TTAAACTAAT	TATTTTCATAT	ACTTTTTTTGA	TGACGTGGAT	GCATTGCCAT
P-PvArc3-417683-FL	TTAAACTAAT	TATTTTCATAT	ACTTTTTTTGA	TGACGTGGAT	GCATTGCCAT
P-Pv-Arc5-FL	TTAAACTAAT	TATTTTCATAT	ACTTTTTTTGA	TGACGTGGAT	GCATTGCCAT
	1751				1800
P-PvArc4-417775-FL	CGTTGTTTGT	TAATTGTTAA	TTTATATTA	TTATTTCTCC	CTCAAATAAT
P-PvArc3-417683-FL	CGTTGTTTGT	TAATTGTTAA	TTTATATTA	TTATTTCTCC	CTCAAATAAT
P-Pv-Arc5-FL	CGTTGTTTAA	TAATTGTTAA	TTTGGAGTT.	.....	...GAATAAT
	1801				1850
P-PvArc4-417775-FL	ATTATAAAAAG	ATAATGATTC	.....GATT	TTGCATTTGT	TGTTGTATAA
P-PvArc3-417683-FL	ATTATAAAAAG	ATAATGATTC	GATTTTGATT	TTGCATTTGT	TGTTGTATAA
P-Pv-Arc5-FL	AAAATGAAAAG	AAAAAAGTTG	GA..AAGATT	TTGCATTTGT	TGTTGTATAA
	1851				1900
P-PvArc4-417775-FL	ATAGAGAAGA	GAGTGATGGT	TAATGCATGA	ATGCATGATC	AGATCTGCCA
P-PvArc3-417683-FL	ATAGAGAAGA	GAGTGATGGT	TAATGCATGA	ATGCATGATC	AGATCTGCCA
P-Pv-Arc5-FL	ATAGAGAAGA	GAGTGATGGT	TAATGCATGA	ATGCATGATC	AGATCTGCCA
	1901				
P-PvArc4-417775-FL	TGG (SEQ ID NO: 13)				
P-PvArc3-417683-FL	TGG (SEQ ID NO: 12)				
P-Pv-Arc5-FL	TGG (SEQ ID NO: 14)				

*Figure 4e*



	Promoter	5' UTR	Coding sequence	3' terminator
pMON55534	tARC5	ARC5	GUS	ADR12
pMON55535	tARC5	ARC5	GUS	E9
pMON55540	tARC5	GmHSP17.9	GUS	E9
pMON55569	tARC5	GmdSSU	GUS	E9
pMON55570	tARC5	PetHSP70	GUS	E9
pMON55575	tARC5	ARC5	GUS	Arc5

Figure 5

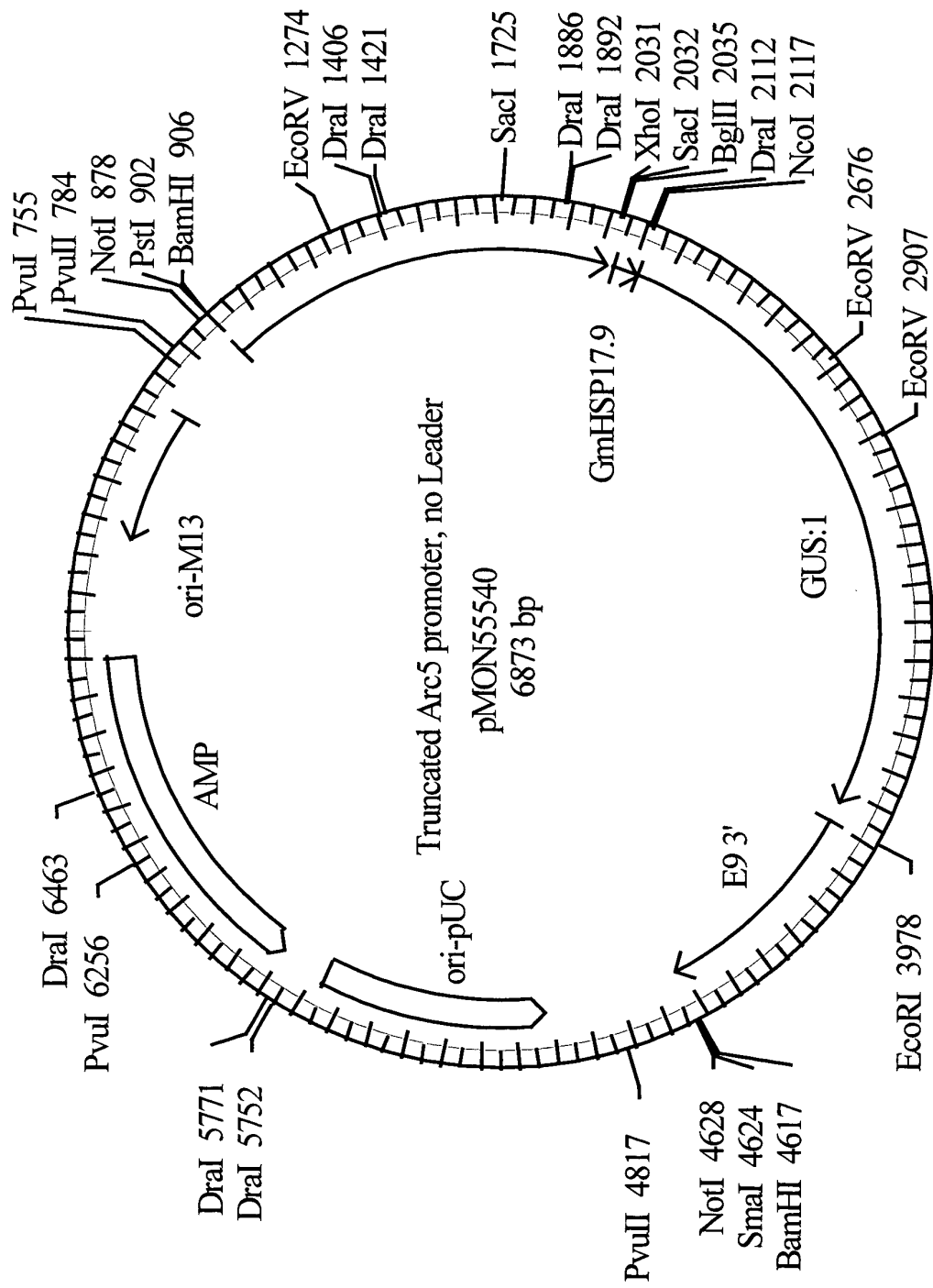


Figure 6

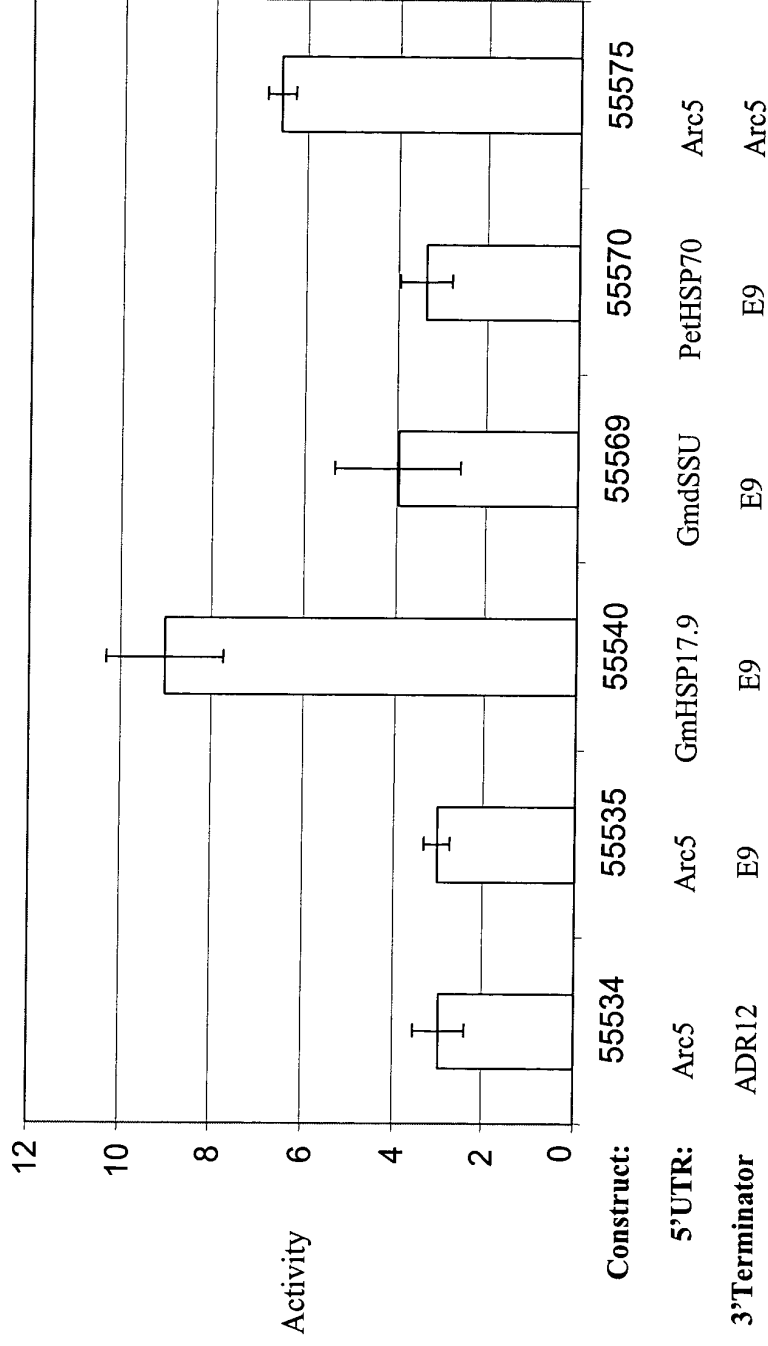


Figure 7